

STATE OF ILLINOIS  
ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON	)	
COMPANY	)	
	)	
Proposed general increase in	)	Docket No. 05-0597
rates for delivery service. (Tariffs	)	
filed on August 31, 2005)	)	

REBUTTAL TESTIMONY

OF

DR. DALE E. SWAN

ON BEHALF OF

THE

UNITED STATES DEPARTMENT OF ENERGY

FEBRUARY 27, 2006

---

**EXETER**

ASSOCIATES, INC.  
5565 Sterrett Place  
Suite 310  
Columbia, Maryland 21044

STATE OF ILLINOIS  
ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON	)	
COMPANY	)	
	)	
Proposed general increase in	)	Docket No. 05-0597
rates for delivery service. (Tariffs	)	
filed on August 31, 2005)	)	

REBUTTAL TESTIMONY

OF

DR. DALE E. SWAN

1    Q.            PLEASE STATE YOUR NAME, OCCUPATION AND ADDRESS.

2    A.            My name is Dale E. Swan. I am a senior economist and principal with Exeter  
3                   Associates, Inc. Our offices are located at 5565 Sterrett Place, Columbia,  
4                   Maryland 21044.

5    Q.            DR. SWAN, PLEASE SUMMARIZE YOUR PROFESSIONAL  
6                   QUALIFICATIONS.

7    A.            I hold a B.S. degree in Business Administration from Ithaca College. I attended a  
8                   master's program in economics at Tufts University, and I hold a Ph.D. in  
9                   economics from the University of North Carolina at Chapel Hill. Prior to my  
10                  consulting work, I served as Assistant and Associate Professor on the economics  
11                  faculties of several colleges and universities. I also served as staff economist  
12                  with the Federal Energy Administration and with the Arabian American Oil  
13                  Company. For the last 29 years, I have consulted on matters primarily related to  
14                  the electric utility industry, the last 25 years with Exeter. Much of my work over  
15                  the last two decades has concentrated in the areas of long-term electric power

16 supply planning and contract negotiations for large power users, and on electric  
17 utility cost allocation and rate design. For much of this period, I have directed  
18 Exeter's utility support services projects with the United States Department of  
19 Energy (DOE). As part of this work, I have been responsible for technical  
20 supervision of Exeter's participation in DOE interventions in numerous rate  
21 cases, for the financial and locational assessment of transmission and generation  
22 projects, and for the negotiation of technical aspects of power supply and  
23 facilities contracts. In the last several years, my activities have also focused on  
24 the process of electric industry restructuring.

25 A complete copy of my resume is provided as an attachment to my testimony.

26 Q. HAVE YOU TESTIFIED IN OTHER REGULATORY PROCEEDINGS?

27 A. Yes. I have testified on a variety of topics relating to electric utilities in over 50  
28 proceedings before federal and state regulatory commissions. A complete list of  
29 the cases in which I have testified is provided as part of my resume.

30 Q. DR. SWAN, WHAT IS THE PURPOSE OF YOUR TESTIMONY?

31 A. I have been asked by the Department of Energy (DOE) to respond to certain  
32 representations made by Commonwealth Edison (ComEd or the Company)  
33 witnesses regarding the appropriateness of the proposed increases in the  
34 Distribution Facilities Charge for non-residential customers with loads at or above  
35 10,000 kW. I shall first address the general appropriateness of mechanistically  
36 developing rates based on embedded unit costs from the Company's embedded  
37 cost study. I shall also offer a recommended adjustment to the determination of  
38 embedded costs for the High Voltage class.

39 Q. WHAT MAJOR DOE FACILITIES TAKE SERVICE FROM COMED?

40 A. Two-large DOE science laboratories take delivery service from ComEd. Argonne  
41 National Laboratory (Argonne) has a peak load of around 44 MW and takes  
42 service at 138 kV. Fermi National Accelerator Laboratory (Fermi) has a peak  
43 demand in the neighborhood of 55 MW and takes service at 345 kV.

44 Q. DR. SWAN, DO YOU PROVIDE EXHIBITS IN SUPPORT OF YOUR  
45 TESTIMONY.

46 A. Yes, I have attached DOE Exhibits 1.1, 1.2 and 1.3 to my testimony.

47 Q. DR. SWAN, WERE THESE EXHIBITS PREPARED BY YOU OR UNDER  
48 YOUR SUPERVISION?

49 A. Yes.  
50

51 **THE MECHANISTIC TRANSLATION OF COSTS INTO RATES**

52 Q. PLEASE DESCRIBE YOUR UNDERSTANDING OF MR. CRUMRINE'S  
53 TESTIMONY.

54 A. Beginning at page 23 of his rebuttal testimony (ComEd Exhibit 23.0), Mr.  
55 Crumrine answers testimony filed by IIEC witnesses Robert Stephens and Alan  
56 Chalfont, and by BOMA witnesses T.J. Bookover and Kristav M. Childress, and  
57 David W. McClanahan. Each of those witnesses challenged the Company's  
58 proposal to consolidate the existing four large non-residential customer classes  
59 (1,000 to 3,000 kW; 3,000 to 6,000 kW, 6,000 to 10,000 kW, and Over 10,000  
60 kW) into one class for all customers served below 69 kV, with only one additional  
61 class for all customers, regardless of size, served at or above 69 kV. The major  
62 concern raised by these witnesses was that the resulting increase for the group  
63 of largest customers with loads exceeding 10,000 kW is excessively high. Based

on rates to become effective June 1, 2006, the increase in this charge for these largest standard voltage customers is proposed at 133 percent. The increase cited by these witnesses for high voltage customers is a proposed 109 percent. In fact, the Company's proposed increase for high voltage customers with loads in excess of 10,000 kW (the majority of high voltage customers and loads) would be approximately 160 percent when account is also taken of the Company's proposal to eliminate the credits from Rider 8 (Allowance for Customer-Owned Transformers), as well as Rider HVDS (High Voltage Delivery Service). The Company agreed with this characterization in its response to Data Request No. DOE 1.21, which is provided as Exhibit DOE 1.1.

Q. WHAT WAS THE BASIS FOR THE IIEC AND BOMA WITNESSES' OBJECTIONS TO THE CUSTOMER CLASS CONSOLIDATION PROPOSED BY THE COMPANY?

A. The general concern seemed to be that, while the first three classes, comprising customers with loads from 1,000 kW through 10,000 kW, currently have rates that are reasonably close, those with loads in excess of 10,000 kW currently pay a rate well below the other classes – \$2.34/kW-month compared to around \$4.50/kW-month for standard voltage service. Consequently, consolidating the four classes into one results in proposed rate increases for the three smaller classes in the neighborhood of 18 to 22 percent, while those standard voltage customers in excess of 10,000 kW would receive an increase of 133 percent. The discrepancy between the increases for the smaller and largest high voltage customers is even more pronounced. High voltage customers between 1,000 kW and 10,000 kW would receive effective decreases between 26% and 31%,

88 while high voltage customers with loads in excess of 10,000 kW would receive an  
89 effective increase of 160 percent.

90 Q. HOW DOES MR. CRUMRINE RESPOND TO THESE CRITICISMS?

91 A. Mr. Crumrine states that the basis for the consolidation was the fact that the  
92 embedded cost of providing this service was very similar for all four classes  
93 based on the embedded class cost of service study (ECOSS) presented by the  
94 Company in its last delivery services case, Docket No. 01-0423. Further, he  
95 cites a new ECOSS prepared by Mr. Alan Heintz (ComEd Exhibit No. 25.1) in  
96 this case, which shows that the embedded cost of distribution facilities is nearly  
97 identical for customers with loads between 1,000 kW and 10,000 kW and  
98 customers with loads in excess of 10,000 kW. (Lines 525 to 529).

99 Q. DO YOU AGREE WITH MR. CRUMRINE'S RATIONALE FOR IMPOSING  
100 THESE VERY LARGE INCREASES ON CUSTOMERS WITH LOADS IN  
101 EXCESS OF 10,000 KW?

102 A. No. ComEd's proposed rates result from a mechanistic conversion of unit costs  
103 as estimated in the embedded cost study without any regard to the other usual  
104 rate design criteria, such as rate stability or rate continuity. I believe rate  
105 continuity is a particularly important criterion to keep in mind during this transition  
106 period. The Commission initially decided to move from the use of marginal costs  
107 to embedded costs for determining class revenues and rates in Docket No. 99-  
108 0117, ComEd's first delivery services case. As I understood the Commission's  
109 reasoning for shifting from its approximate two decades of reliance on marginal  
110 costs, it had much to do with its concern that the use of marginal costs by  
111 ComEd to set certain prices or credits would provide it an unfair advantage in the  
112 provision of certain competitive services and retard the development of a

competitive market. Specifically the Commission noted that, “In theory, marginal cost pricing promotes efficient competition because it sends efficient ‘price signals’ to potential competitors. The problem with this theory, however, is that in a regulated environment that is in transition, it also unduly protects an incumbent from competition.” (Order, p. 57)

There seems to be a distinct possibility that, at some point in the future after the transition is complete, the Commission will again entertain the use of marginal cost pricing. The current lower distribution facilities charge for customers with loads in excess of 10,000 kW is more reflective of the relative marginal costs of these four customer classes based on the Company’s marginal cost study in Docket No. 01-0423. The estimated marginal cost was \$3.82/kW for customers with loads in excess of 10,000 kW as compared to between \$4.37/kW and \$4.58/kW for customers with loads between 1,000 kW and 10,000 kW (ComEd Exhibit 13.3, p.3). In this context, one can question whether it is appropriate to slavishly adhere to the embedded cost study if it results in rate increases of 133 percent and 160 percent.

Q. DID THE COMPANY ENDORSE THE USE OF EMBEDDED COSTS FOR DETERMINING CLASS REVENUES AND RATE DESIGN IN ITS FIRST TWO DELIVERY SERVICES CASES, DOCKET NOS. 99-0117 AND 01-0423?

A. No. ComEd has been a strong proponent of the use of marginal costs for a number of years, and it recommended that marginal costs be used to determine class delivery service revenues and the design of delivery service rates in its first two delivery service cases. Ms. Arlene Jurasek, then Vice President, Regulatory

137 and Strategic Services for ComEd, summed up the Company's position on this  
138 issue in the last case (No. 01-0423, ComEd Exhibit 1.0):

139  
140 "In general, this means that rate designs should be  
141 based upon marginal cost principles, or at a  
142 minimum where other compelling factors are present  
143 should not deviate far or long from marginal cost  
144 principles" (Lines 393-395)

145  
146 She goes on to say:

147  
148 "...this does not mean that the allocation of the  
149 revenue requirement must always be based on  
150 equalized percentages of marginal costs alone. In  
151 some cases, deviations may be warranted, or at least  
152 acceptable, in particular during transition periods."  
153 (Lines 405-408)

154  
155 "In this case, the Commission could do so in a  
156 measured manner by choosing to use the class  
157 allocation factors that were a product of ComEd's  
158 embedded cost study," (Lines 417-418)

159  
160 "Although ComEd in this case is proposing to  
161 allocate the revenue requirement among classes  
162 based on equal percentages of marginal cost without  
163 subsidies, should the Commission so desire, ComEd  
164 is willing to accept an allocation of its revenue  
165 requirement between residential and non-residential  
166 classes based upon the specific results of its  
167 embedded study.

168  
169 I emphasize that this is not an acceptance of  
170 embedded cost rate design. Embedded cost  
171 ratemaking in principle is a deeply flawed approach,  
172 and ComEd expressly reserves the right to contest  
173 the use of this methodology in this case and in future  
174 cases." (Lines 422-430)

175  
176 Q. IS THE COMPANY NOW COMMITTED ON A GOING-FORWARD BASIS  
177 TO THE USE OF EMBEDDED COSTS FOR THE DETERMINATION OF



178 CLASS REVENUES AND THE DESIGN OF DELIVERY SERVICE  
179 RATES?

180 A. That does not seem to be the case. In his direct testimony (ComEd Exhibit 9.0)  
181 Mr. Crumrine makes the following statements:

182  
183 "...while ComEd continues to support marginal cost  
184 principles for the pricing of electric delivery services,  
185 in the interest of narrowing the issues in this already  
186 complex case, ComEd is proposing the use of an  
187 embedded cost study for both interclass revenue  
188 allocation and rate design purposes. However,  
189 ComEd reserves the right to propose the use of a  
190 marginal cost study in future proceedings." (Lines  
191 929-934)  
192

193 Q. WHAT IS THE RELEVANCE OF THE COMPANY'S POSITION ON  
194 MARGINAL COSTS TO THE APPROPRIATENESS OF ITS PROPOSED  
195 DISTRIBUTION FACILITIES CHARGE INCREASES FOR CUSTOMERS  
196 WITH LOADS IN EXCESS OF 10,000 KW?

197 A. Based on Ms. Juracek's statements in the last case and Mr. Crumrine's  
198 statement in this case, it is uncertain which costing approach the Company will  
199 recommend in the next case. Consequently, it makes little sense in my view to  
200 urge, as Mr. Crumrine does, the mechanistic conversion of unit embedded costs  
201 to rates with no regard to issues of rate stability and continuity. The Company  
202 has proposed to increase the Distribution Facilities Charge for standard voltage  
203 customers with loads in excess of 10,000 kW by 133 percent, and by 160 percent  
204 for high voltage customers with loads in excess of 10,000 kW. This compares to  
205 an average percentage increase for non-residential customers of around 25  
206 percent. These are extremely large absolute increases and relative increases

207 more than 5 or 6 times the non-residential average. These increases are beyond  
208 any reasonable definition of rate stability or rate continuity.

209 In addition, if the Company decides in the next delivery service case or  
210 two to again recommend the use of marginal costs, and the Commission were to  
211 agree with the Company, that could mean significant reductions in the distribution  
212 facilities charges for these largest customers after these extremely large  
213 increases. This kind of rate instability undermines one of the major ratemaking  
214 goals stated so well by the venerable Professor Bonbright: "5. Stability of the  
215 rates themselves, with a minimum of unexpected changes seriously adverse to  
216 existing customers."<sup>1</sup>

217 Q. HAVE THE COMPANY WITNESSES ADDRESSED THE ISSUE OF  
218 RATE CONTINUITY IN THIS PROCEEDING?

219 A. Only indirectly and not in conjunction with the proposed increase for customers  
220 with loads in excess of 10,000 kW. Mr. Crumrine agrees in his rebuttal testimony  
221 that, "under certain circumstances using judgment to set interclass cost allocation  
222 is an accepted practice." He states that, "Under unique circumstances, generally  
223 to avoid large rate shock, this Commission has used other criteria, most often the  
224 judgment of the analyst, to allocate costs among customer classes." (ComEd  
225 Exhibit 23.0, lines 802-803)

226 Dr. John Landon also addressed the issue in his rebuttal testimony  
227 (ComEd Ex. 15.0). Beginning at line 63, Dr. Landon states:

228 "Ratemaking principles include the principle that  
229 prices should reflect costs but also incorporate  
230 additional considerations, such as price stability and  
231 predictability. When costs change and substantial  
232

---

<sup>1</sup>James C. Bonbright, Principles of Public Utility Rates, Columbia University Press, New York, 1961, p.291.

233                   and disproportionate rate changes therefore become  
234                   necessary, it may be appropriate for rates to be  
235                   adjusted to reflect new cost levels over a period of  
236                   time.”

237    Q.            IN YOUR VIEW DO THE PROPOSED INCREASES FOR DISTRIBUTION  
238                   FACILITIES CHARGES FOR STANDARD AND HIGH VOLTAGE  
239                   CUSTOMERS WITH LOADS IN EXCESS OF 10,000 KW WARRANT  
240                   THE KIND OF RATE MODERATION ADJUSTMENTS THAT MR.  
241                   CRUMRINE AND DR. LANDON WERE REFERRING TO?

242    A.           Yes. The proposed increases to these customers of 133 percent and 160  
243                   percent constitute the kind of “rate shock” that Mr. Crumrine referred to in his  
244                   testimony and the “substantial and disproportionate rate changes” referred to by  
245                   Dr. Landon. In my 30 years of participating in electric utility rate cases I do not  
246                   recall a proposal to increase a major rate (generating most of the revenue from  
247                   the class) by as large a percentage as is being proposed for the distribution  
248                   facilities charges for non-residential customers with loads in excess of 10,000  
249                   kW.

250    Q.            WHAT ALTERNATIVE CHARGES DO YOU PROPOSE FOR THESE  
251                   CUSTOMERS?

252    A.           In his direct testimony, Mr. Robert Stephens, on behalf of the Illinois Industrial  
253                   Energy Consumers, proposed that the Company be directed to retain the class of  
254                   standard voltage customers with loads in excess of 10,000 kW and that the  
255                   distribution facilities charge for this class be set by increasing (or decreasing) the  
256                   June 2006 rate in proportion to “ComEd’s overall revenue increase or decrease  
257                   that results from the Commission’s determinations in this case.” (IIEC Exhibit 1.0,  
258                   lines 303-304) I can endorse Mr. Stephens’ recommendation, but would add that  
259                   if, for some reason, the Commission believes that it must make some greater

260 progress toward rates equal to the embedded unit cost provided in the  
261 Company's ECOSSE, then it might consider adding 5 percentage points to the  
262 increase that would result from Mr. Stephens' recommendation. At the  
263 Company's proposed total revenues, this would result in around a 30 percent  
264 increase in these charges.

265 In the case of high voltage customers, Mr. Stephens recommended that  
266 the appropriate base to adjust would be the "current net charge of \$1.04 per kW"  
267 which accounts for the current Rider HVDS credit. I would recommend that the  
268 appropriate starting point for these customers should be \$0.8347 per kW, which  
269 also accounts for the elimination of the credit in Rider 8.

270  
271 **AN ADJUSTMENT TO COMED'S EMBEDDED COST STUDY**

272 Q. WHAT ADJUSTMENT DO YOU PROPOSE TO MAKE TO THE  
273 COMPANY'S EMBEDDED CLASS COST OF SERVICE STUDY?

274 A. I propose to separate the High Voltage (HV) class into two subclasses (below 69  
275 kV and 69 kV and above) in order to eliminate the allocation of the costs of lower  
276 voltage facilities to customers who take service at voltage levels at or in excess  
277 of 69 kV and therefore do not use those facilities. This will eliminate an  
278 approximate \$4 million intra-class subsidy that is contained in ComEd Exhibit  
279 25.1, and referred to in Mr. Heintz's rebuttal testimony. If the Commission adopts  
280 my proposal regarding a system-wide average increase in the Distribution  
281 Facilities Charges for customers with loads in excess of 10,000 kW, then this  
282 adjustment is moot. However, should the Commission choose to base the  
283 charges for these customers on a direct translation of unit embedded costs, then

I would urge the Commission to adopt the ECOSS adjustment I recommend before determining the Distribution Facilities Charge for high voltage customers.

Q. THE COMPANY CHARACTERIZES SERVICE TO THE HIGH VOLTAGE DELIVERY CLASS AS SERVICE AT 69 KV AND ABOVE. ARE SOME OF THE CUSTOMERS IN THE HV DELIVERY CLASS SERVED AT LOWER VOLTAGES?

A. Yes. In response to DOE Data Requests 1.10 and 1.11, the Company stated that some of the loads included in the High Voltage Delivery Service class are at voltages below 69 kV. A review of the allocation factors Mr. Heintz uses in his cost study confirms this fact. In essence, ComEd's proposed HV Delivery Service rate combines service to customers at three different voltage levels – above, at, and below 69 kV– with a single rate used for all customers. ComEd's response to DOE Request 2.05 shows that 85.4 percent of test year energy sales are at voltages above 69 kV, 1.3 percent at 69 kV, and 13.3 percent at voltages below 69 kV.

Q. HAVE YOU REACHED A CONCLUSION REGARDING THE COMPANY'S ALLOCATION OF COSTS TO THE HIGH VOLTAGE DELIVERY CLASS?

A. Yes. I find that ComEd's decision to combine in a single rate class customers served at voltages below 69 kV with customers taking service at or above 69 kV introduces a significant intra-class subsidy. The cost of serving customers taking service below 69 kV is understated, while the cost of serving customers taking service at or above 69 kV is overstated under the Company's procedure. This results from the allocation of the costs associated with three categories of distribution facilities: (1) High Voltage Distribution Substations; (2) Distribution

309 Substations; and (3) Distribution Lines. Consider, for example, the allocation of  
310 Distribution Lines to the High Voltage Delivery class. Under ComEd's cost of  
311 service allocation process, these costs are allocated to the HV class on the basis  
312 of NCP demands below 69 kV. So, even though customers receiving service at  
313 voltages at or above 69 kV bear no cost responsibility for any share of  
314 Distribution Lines costs, the inclusion in the HV class of customers receiving  
315 service at voltages below 69 kV requires that all members of the class assume  
316 the cost responsibility for Distribution Lines costs, even those receiving service at  
317 or above 69 kV.

318 Q. IS IT TRUE THAT COMED'S HV COST ALLOCATION FACTOR FOR  
319 DISTRIBUTION LINES IS VERY SMALL, REFLECTING THE FACT THAT  
320 VERY LITTLE HV CUSTOMERS' LOAD IS SERVED AT THESE LOWER  
321 VOLTAGES?

322 A. That is correct. But while the HV cost allocation percentage is very small, it is  
323 applied to a very large Illinois jurisdictional cost of service figure. So when the  
324 NCP allocator for demands below 69 kV used to allocate distribution lines (which  
325 is equal to 0.42 percent) is applied to the total jurisdictional distribution lines cost  
326 of service of \$812,810,614, costs of \$3,449,525 are assigned to the entire HV  
327 delivery service class (ComEd Exhibit 25.1, Schedule 2a, pp. 11-12, line 195).  
328 Since most of the billing demands in the class are accounted for by customers at  
329 or above 69 kV, the end result is that high voltage customers at or above 69 kV  
330 share disproportionately in the cost responsibility associated with lower voltage  
331 ComEd distribution facilities. As an example, under the Company's proposal,  
332 Argonne, served directly from ComEd's 138 kV facilities, would be forced to pay

for lower voltage distribution lines throughout ComEd's service territory that it does not use.

Q. HOW DOES THE COMPANY'S APPROACH AFFECT THE ALLOCATION OF COSTS TO THE HV CLASS AS A WHOLE?

A. The impact of the Company's approach can be seen by reviewing the results on Schedule 2a of ComEd Ex 25.1, at page 12, line 225, which is provided as DOE Exhibit 1.2. This shows that HV Distribution Facilities costs are equal to \$20,401,679. Of this amount, however, more than 25 percent, \$5,196,576 (which is equal to the cost of High Voltage Distribution Substations, Distribution Substations, and Distribution Lines allocated to the HV class), represents costs for facilities that virtually provide service only at delivery points served below 69 kV. And yet, under ComEd's proposal, customers at or above 69 kV would end up paying for these.

Q. HOW DOES THIS FACT AFFECT THE HV DISTRIBUTION DEMAND CHARGE?

A. The fact that more than 25 percent of costs are the responsibility of customers below 69 kV introduces a cross-subsidy, because only ten percent of HV billing demands are attributable to lower voltage customers. Unless ComEd has a separate rate for customers at or above 69 kV, it must follow that the average demand charge for a voltage-combined rate class is too high for the customers taking service at or above 69 kV.

Q. DO YOU OFFER A DETAILED ANALYSIS TO IDENTIFY THE EXTENT OF THE CROSS-SUBSIDY YOU FIND?

A. Yes. For this purpose, two High Voltage Delivery sub-classes were created, one taking service at voltages at or above 69 kV (the High Voltage sub-class), and a

second taking service below 69 kV (the Low Voltage sub-class). The costs ComEd assigned to the entire High Voltage Delivery class were then allocated between these two sub-classes. DOE Exhibit 1.3 shows these allocations and the resulting unit delivery costs for each of these sub-HV delivery rate groups.

Q. PLEASE EXPLAIN THE DETAILS OF THE COMPUTATIONS UNDERLYING THE RESULTS IN DOE EXHIBIT 1.3.

A. The analysis in DOE Exhibit 1.3 is relatively straightforward. Each item in the Company's derivation of distribution costs in Mr. Heintz's ComEd Exhibit 25.1 is allocated between customers served at voltages at or above 69 kV and customers below 69 kV. The costs associated with Distribution Substations and Distribution Lines were assigned directly to the "Low-Voltage" subclass, since none of these costs are the responsibility of customers at or above 69 kV. A small portion of the costs of High Voltage Distribution substations was allocated to the "High-Voltage" subclass because they are allocated on CPs at 69 kV and below. The remainder was allocated to the "Low Voltage" subclass. High Voltage Lines, which the Company allocates on the "CP-All" allocator, were divided between the groups on the basis of coincident peaks. Another significant cost item is the Illinois Distribution Tax. This was allocated between the two sub-HV rate classes on the basis of energy, which is the basis ComEd uses to allocate the tax among all of its customer classes.

Another sizeable component of the HV Delivery service rate is the cost of ESS substations. Based on the response to DOE Request 2.03, all of these costs were assigned to customers at or above 69 kV. Finally, the minor Uncollectibles Accounts cost was assumed to be split equally between the two subgroups.



383 Q. WOULD YOU EXPLAIN WHAT DOE EXHIBIT 1.3 SHOWS?

384 A. Yes. The analysis in DOE Exhibit 1.3 shows that the average \$2.17/kW  
385 embedded unit cost, underlying the Company's proposed rate for High Voltage  
386 Delivery service, becomes \$1.72/kW, or more than 20 percent lower, for  
387 customers at or above 69 kV, while the unit cost for customers below 69 kV is  
388 much higher -- \$6.11/kW.

389 Q. HOW DO YOU PROPOSE THAT THESE RESULTS BE UTILIZED BY  
390 THE COMMISSION?

391 A. I recommend that, if the Commission orders rates to be based on a mechanistic  
392 translation of embedded unit costs to rates, that there be two classes of HV  
393 customers, and that the Distribution Facilities Charge be based on a unit cost of  
394 \$1.72/kW for customers at or above 69 kV.

395 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

396 A. Yes.

## DALE E. SWAN

Dr. Swan is a senior economist and principal at Exeter Associates, Inc. His areas of expertise include energy supply and demand analysis, electric industry restructuring, utility cost allocation and rate structure design, utility contract negotiation, antitrust policy, and public utility regulation.

Dr. Swan has presented expert testimony in utility rate cases before the Federal Energy Regulatory Commission and before numerous state regulatory commissions. He has testified on marginal and embedded costing, rate structure design, long-term demand forecasting, short-term sales forecasts, the treatment of off-system sales, electric industry restructuring, and antitrust considerations. He has directed major projects for the U.S. Department of Energy, the U.S. Air Force, and the Rhode Island Public Utilities Commission on such issues as alternative power supply options and innovative rate structure experiments and implementation, and he has prepared and presented seminars and workshops on such issues as marginal costing, rate design, and interruptible rates for, among others, the National Regulatory Research Institute, the U.S. Department of Energy, and for state commission staffs in Maryland, Minnesota, and New Hampshire.

Dr. Swan has assisted federal agencies in the negotiation of electric power supply contracts and in the financial and locational assessment of transmission and generation projects. He has also prepared reports to several federal and state agencies on costing methods, rate design, the demand for electric power, PURPA requirements, bulk power supply planning, stranded cost recovery, standby rates, value-of-service pricing, the use of special contracts, and other issues. He has also acted as an Advisor to the Maine Public Utilities Commission in the restructuring proceedings for the three investor-owned Maine electric companies.

### Education:

B.S. (Business Administration) - Ithaca College, 1962.

M.A. Program in Economics - Tufts University, 1962-63.

Ph.D. (Economics) - University of North Carolina at Chapel Hill, 1972.

### Previous Employment:

1976-1980	-	Senior Economist, J.W. Wilson & Associates, Inc.
1974-1976	-	Associate Professor of Economics, Jacksonville State University
1974	-	Economist, Office of Energy Systems, Federal Energy Administration
1973	-	Staff Economist, Economics Department, Arabian-American Oil Company

1968-1973	-	Assistant and Associate Professor of Economics, Hampden-Sydney College
1969-1973	-	Visiting Assistant Professor of Economics, Randolph-Macon Womans College
1967-1968	-	Assistant Professor of Economics, Southern Methodist University
1966-1967	-	Visiting Assistant Professor of Economics, North Carolina Central University
1963-1964	-	Market Research Analyst, The Carter's Ink Company

Previous Professional Work:

At J.W. Wilson & Associates, Inc., Dr. Swan had primary responsibility for the development and direction of several of the firm's largest projects relating to the electric utility industry and costing and rate design issues in particular. Dr. Swan also had major responsibilities in the areas of cogeneration, antitrust, PURPA requirements, and technical assistance to state regulatory authorities under DOE grant programs.

At the Federal Energy Administration, Dr. Swan participated in the development of a National Energy Accounting System, similar to and compatible with the National Income and Product Accounts and the U.S. Input/Output Accounts. During his tenure at Jacksonville State University, Dr. Swan continued with this work as a consultant to the FEA.

While with ARAMCO, Dr. Swan prepared financial analyses of capital investment alternatives, developed cost trend estimates for price negotiations, and initiated the preparation of revised price trend factors to be used for budgeting purposes.

At Carter's Ink Company, Dr. Swan was responsible for conducting new product and new market research for the Director of Marketing, including consumer attitudinal studies on new product and packaging designs.

Dr. Swan has taught both graduate and undergraduate courses during his academic career. Among the courses he has taught are Microeconomic Theory, Industrial Organization, Economic History, International Trade, Economic Development, and Principles of Economics.

Selected Publications, Papers, and Reports:

“Fermi National Accelerator Laboratory Phase 1 Electric Supply Options Study,” (Exeter Associates, Inc., for the U.S. Department of Energy, Federal Energy Management Program, December 2004.)

“Phase 1 Electric Power Options Study for Brookhaven National Laboratory,” (Exeter Associates, Inc. for the U.S. Department of Energy, Federal Energy Management Program, June 2004).

“Phase 1 Electric Supply Options Study for Fermi National Accelerator Laboratory,” (Exeter Associates, Inc. for the U.S. Department of Energy, Federal Energy Management Program, December 2004).

“Electric Power and Natural Gas Supply Options Study for the DOE Oak Ridge Reservation,” (Exeter Associates, Inc., for the U.S. Department of Energy, Federal Energy Management Program, March 2004).

“A Comparative Evaluation of Two Proposals to Meet the Long-Term Steam Requirements of the Savannah River Site.” (Exeter Associates, Inc., for the U.S. Department of Energy, Federal Energy Management Program, November 2001.)

“Electric Power Supply Options to Meet the Cold Standby and Possible Restart Requirements of the Portsmouth Gaseous Diffusion Plant.” (Exeter Associates, Inc. for the U.S. Department of Energy, Federal Energy Management Program, October 2001.)

“Strategic Options in Planning for the Long-Term Power Requirements of the DOE/OAK Laboratories.” (Exeter Associates, Inc. for the U.S. Department of Energy, Office of Project and Fixed Asset Management, September 1998.)

“Utility Options Study: Rocky Flats Environmental Technology Site.” (Exeter Associates, Inc. for the U.S. Department of Energy, Office of Project and Fixed Asset Management, March 1997.)

“Competitive Acquisition of Power by Federal Agencies: Current Possibilities and Future Prospects.” (Presented before the Competitive Power Congress, Philadelphia, Pennsylvania, July 21, 1995.)

“Standby Rate Rulemaking: A Discussion of Issues and Proposed Positions.” (Exeter Associates, Inc. for the Maine Public Utilities Commission, January 10, 1995.)

“Stranded Cost Rulemaking: A Discussion of Issues and Proposed Positions.” (Exeter Associates, Inc. for the Maine Public Utilities Commission, January 3, 1995.)

“Superconducting Super Collider Permanent Power Supply: A Preliminary Consideration of Supply Alternatives.” (Exeter Associates, Inc., revised draft report prepared for the U.S.

Department of Energy, Office of Organization, Resources and Facilities Management, March 1992.)

"The Potential Savings Associated with Exporting EBR-II Energy from the Idaho National Engineering Laboratory to Another Federal Facility." (Exeter Associates, Inc. for the U.S. Department of Energy, Office of Project and Facilities Management, March 1991.)

"Planning and Preparing a Utilities Options Study," in Utilities Planning and Management for Department of Energy Facilities. (U.S. Department of Energy, February 1990.)

"An Evaluation of the Financial Benefits to the United States Government from Using \$175 Million of the TRNLC Fund to Purchase Generating Capacity to Reduce Power Costs of the Superconducting Super Collider." (Exeter Associates, Inc. for the U.S. Department of Energy, Office of Project and Facilities Management, January 1990.)

"Power Supply Arrangements at Brookhaven National Laboratory." (Exeter Associates, Inc. for the U.S. Department of Energy, Office of Project and Facilities Management, October 1989.)

"Electric Power Supply Options for the Continuous Electron Beam Accelerator Facility." (Exeter Associates, Inc. for the U.S. Department of Energy, Office of Project and Facilities Management, July 1989.)

"The Potential Future Value of Byproduct Steam from a New Production Reactor Based on Four Alternative Technologies and Three Alternative Sites," with Steven Estomin and Richard Galligan. (Exeter Associates, Inc. for the U.S. Department of Energy, August 1988.)

"An Analysis of the Optimal Allocation of Available Western Area Power Administrative Preference Power Among Three Northern California Laboratories," with Charles E. Johnson. (Exeter Associates Inc. for DOE San Francisco Operations Office, March 1986.)

"Report on the Role of Special Contracts in Electric and Gas Utility Ratemaking." (Exeter Associates, Inc. for the U.S. Postal Service, February 1984.)

"The Electric Utility Industry," in Study of Pricing Precedents in the Public Utility Industry. (Exeter Associates, Inc., for the U.S. Postal Service, February 1984.)

"State Regulatory Attitudes Toward Fuel Expense Issues," with Matthew I. Kahal, Report to the Electric Power Research Institute, June 1983.

"A Summary and Analysis of Federal Legislation Affecting Electric and Gas Utility Diversification." (Exeter Associates, Inc. for Argonne National Laboratory, August 1981.)

"Average Embedded Cost Studies as the Basis for Rate Designs Consistent with the Goals of the Public Utility Regulatory Policies Act of 1978," prepared for ORI, Inc. and the DOE Office of Utility Systems, February 6, 1981.

"Analysis of the Major Comments Made on the ERA Proposed Voluntary Guideline for the Cost-of-Service Standard Under the Public Utility Regulatory Policies Act of 1978," prepared for ORI, Inc. and the DOE Office of Utility Systems, February 1981.

"The Rhode Island - DOE Electric Utilities Demonstration Project." Final Report - November 1980, and three Interim Reports in July 1978, November 1979, and July 1980. (J.W. Wilson & Associates, Inc. for the Rhode Island Division of Public Utilities and Carriers.)

"An Evaluation of Power Supply Planning by the Six Investor-Owned Electric Utilities in South Dakota," with Ralph E. Miller. (J.W. Wilson & Associates, Inc. for the South Dakota Public Utilities Commission, 1977.)

The Structure and Profitability of the Antebellum Rice Industry: 1859. (New York: Arno Press, 1975.)

"The Structure and Profitability of the Antebellum Rice Industry: 1859." Journal of Economic History, (December 1972.)

"The Productivity and Profitability of Antebellum Slave Labor: A Micro Approach," with James D. Foust. Agricultural History, (January 1970). Later published in William N. Parker (ed.), The Structure of the Cotton Economy of the Antebellum South. (New York: Agriculture History Society, 1970.)

Participation in Conferences, Seminars and Workshops:

Competitive Power Congress, 1995.

Department of Energy Utility Conferences, 1985, 1986, 1990, 1992, 1995, 1996, 1997.

DOD/DOE Combined Utility Planning Conference, March 1987.

American Historical Association Meetings, 1981.

National Regulatory Research Institute Workshop on Time-of-Use Rates, September 1979.

National Regulatory Research Institute State Needs Assessment Conference, August 1979.

Southern Economic Association Meetings, 1969, 1972, 1975.

Economic History Association Meetings, 1972.

Expert Testimony

Presented by Dale E. Swan

1. Before the Public Utilities Commission of the State of Ohio, Case No. 78-676-EL-AIR, on marginal costs and electric rate structure design.
2. Before the Public Utilities Commission of the State of South Dakota, Docket No. 3362, on marginal costs and electric rate structure design.
3. Before the Public Utilities Commission of the State of South Dakota, Docket Nos. F-3240 and F-3241, on electric rate structure design.
4. Before the Public Utilities Commission of the State of Rhode Island, Docket No. 1311, on the design of a proposed inverted rate structure experiment.
5. Before the Public Utilities Commission of the State of Rhode Island, Docket No. 1262, on the operation and the results of a time-of-day rate experiment.
6. Before the Public Utilities Commission of the State of South Dakota, Docket No. F-3116, on test year sales forecasts.
7. Before the Public Utilities Commission of the State of Montana, Docket No. 6441, on test year sales forecasts.
8. Before the Public Service Commission of the State of Maryland, Case No. 6807, on long-term demand forecasting methodology.
9. Before the Public Service Commission of the State of New York, Docket No. 27136, on test year sales forecasts and economic impact.
10. Before the Federal Energy Regulatory Commission, Docket No. ER77-530, on retail competition in the Ohio electric power market.
11. Before the Public Service Commission of the State of Maryland, Case No. 7441 (Phase III), on electric rate structure design and PURPA ratemaking standards.
12. Before the Public Utilities Commission of the State of Rhode Island, Docket No. 1591, on class revenue requirements and electric rate structure design.
13. Before the Public Utilities Commission of the State of Rhode Island, Docket No. 1606, on PURPA Section 111 standards, class cost-of-service, and rate structure design.
14. Before the Public Utilities Commission of the State of Rhode Island, Docket No. 1605, on class revenue requirements and electric rate structure design.

15. Before the Public Utilities Commission of the State of Idaho, Case No. U-1006-185, on class revenue requirements and rate design.
16. Before the Illinois Commerce Commission, Docket No. 82-0026, on marginal-cost-based class revenue responsibilities and rate design.
17. Before the Public Utilities Commission of the State of Idaho, Case No. U-1009-120, on contractual arrangements, embedded-cost-based class revenue requirements, and rate design.
18. Before the Public Utilities Commission of the State of Maryland, Case No. 7695, on proper electric class cost-of-service methodologies.
19. Before the Public Service Commission of Nevada, Docket No. 83-707, on marginal-cost-based class revenue responsibilities and rate design.
20. Before the Illinois Commerce Commission, Docket No. 83-0537, on marginal-cost-based class revenue responsibilities, rate design, and rate schedule qualification standards.
21. Before the Public Utilities Commission of the State of Idaho, Case No. U-1009-137, on jurisdictional separations, embedded class cost-of-service studies, interruptible service credits, and class revenue requirements.
22. Before the South Carolina Public Service Commission, Docket No. 84-122-E, on embedded class cost-of-service methodologies, class revenue requirements, and rate design.
23. Before the Public Utilities Commission of the State of Idaho, Case No. U-1500-157 (May 1985), on the public interest aspects of declaring one utility as the sole supplier of the Idaho National Engineering Laboratory.
24. Before the Illinois Commerce Commission, Docket Nos. 83-0537 (Step 2) and 84-0555 (Consolidated), June 1985, on marginal-cost-based class revenue responsibilities and rate design.
25. Before the Public Utilities Commission of the State of Idaho, Case No. U-1006-265A (May 1987), on embedded class cost-of-service studies, class revenue requirements, and rate design.
26. Before the Public Utilities Commission of the State of Maine, Docket No. 86-242 (August 1987), on by-pass and incentive rate discounts for large industrial customers.
27. Before the Illinois Commerce Commission, Docket No. 87-0427, (February and April 1988), on marginal-cost-based class revenues, Ramsey pricing considerations, and industrial rate design.



28. Before the Illinois Commerce Commission, Docket No. 87-0695, (April 1988), on marginal-cost-based class revenues, Ramsey pricing issues, and industrial rate design.
29. Before the Indiana Utility Regulatory Commission, Cause No. 37414-S2 (October 1989), on ratemaking treatment of off-system sales, embedded cost-of-service study, and rate design.
30. Before the Public Utilities Commission of the State of Maine, Docket 89-68 (January 1990), on measurement and use of marginal costs for determining class revenues.
31. Before the Federal Energy Regulatory Commission, Docket No. EC90-10-000, et. al. (May 1990), with Matthew I. Kahal, on the potential effects of the Northeast Utilities acquisition of Public Service New Hampshire on market concentration and competition in the New England bulk power market.
32. Before the Illinois Commerce Commission, Docket No. 90-0169 (August and October 1990), on the estimation of marginal costs, class revenue responsibilities, and industrial rate design.
33. Before the Public Service Commission of Nevada, Docket Nos. 91-5032 and 91-5055 (September 1991), on the estimation of marginal costs, class revenue responsibilities and rate design for large power users.
34. Before the Public Service Commission of Nevada, Docket No. 92-1067 (May 1992), on the estimation of marginal costs, the cost of providing interruptible power, class revenue responsibilities, and rate design for large power users.
35. Before the Public Utilities Commission of the State of Maine, Docket No. 92-095 (February 1993), Affidavit regarding the efficacy of rate discounts in attracting new business.
36. Before the Public Utilities Commission of the State of Maine, Docket No. 92-315 (June 1993), on revamping of the rate structure to meet competition for sales.
37. Before the Public Utilities Commission of the State of Maine, Docket No. 92-345 (August 1993), with Marvin H. Kahn, on price cap mechanisms as an alternative form of regulation.
38. Before the Public Service Commission of Nevada, Docket No. 92-9055 (October 1993), on franchise rights to serve a large DOE customer.
39. Before the Illinois Commerce Commission, Docket No. 94-0065 (June 1994), on the estimation of marginal costs, class revenue responsibilities, and industrial rate design.
40. Before the Public Service Commission of Nevada, Docket No. 93-11045 (June 1994) on the estimation of marginal costs, environmental externality adders, competition for loads, and class revenue responsibilities.

41. Before the Idaho Public Utilities Commission, Case No. IPC-E-94-5 (November 1994), on embedded class cost allocation and class revenue responsibilities.
42. Before the Public Utilities Commission of the State of Maine, Docket No. 92-315 (II) (March 1995), on the estimation of marginal distribution demand and customer costs.
43. Before the Public Utilities Commission of the State of Maine, Docket No. 95-052 (RD) (October 1995 and January 1996), with Daphne Pscharopoulos, on the estimation of marginal costs as the basis for class revenues and rate design.
44. Before the Public Service Commission of Nevada, Docket No. 96-7020 (November 1996), on the estimation of marginal costs, class revenue responsibilities, and the reasonableness of fixed, up-front facilities charges.
45. Before the Public Service Commission of Montana, Docket No. 97.7.90 (November 1997 and March 1998), on aspects of Montana Power Company's proposed restructuring plan.
46. Before the Illinois Commerce Commission, Docket No. 99-0117 (April 1999), on the design of distribution delivery rates for Commonwealth Edison Company.
47. Before the Public Utilities Commission of Nevada, Docket Nos. 99-4005 and 99-4006, (November 1999), on the design of an electric distribution service tariff for Nevada Power Company.
48. Before the Public Utilities Commission of Nevada, Docket No. 99-7035 (January and February 2000), on Nevada Power proposed revision to its base rates and deferred energy adjustment rates, including the recovery and allocation of deferred capacity costs and the appropriate calculation of annualized fuel and purchased power costs.
49. Before the Illinois Commerce Commission, Docket No. 01-0423 (August, October 2001), on the proper design of distribution delivery rates for Commonwealth Edison Company.
50. Before the Public Utilities Commission of the State of Maine, Docket No. 2001-239 (November 2001), on appropriate procedures governing the provision of rate discounts to retain or attract customers.
51. Before the Public Utilities Commission of Nevada, Docket Nos. 01-10001, 01-10002 and 01-11029 (February 2002), on Nevada Power Company's proposed class cost allocations and revisions to its base rates.
52. Before the Illinois Commerce Commission, Docket No. 02-0479 (August 2002), on the appropriateness of the Company's petition to have bundled Rate 6L service to customers with loads of 3 MW or more declared a competitive service, thereby eliminating Rate 6L as a service of last resort for these customers.

53. Before the Illinois Commerce Commission, Docket Nos. 02-0656, 02-0671, and 02-0672 (CONS.) (December 2002), on proposed changes to Commonwealth Edison Company's retail access options.
54. Before the Public Utilities Commission of Nevada, Docket Nos. 03-10001 and 03-10002 (January 2004), on Nevada Power Company's proposed class revenue allocation and the imposition of new Customer Specific Facilities Charges on certain large customers.
55. Before the Illinois Commerce Commission, Docket No. 05-0159 (June 2005), on the need for Commonwealth Edison Company to offer a fixed-price POLR service to large customers.